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### KEY ISSUES:



- [Extreme heat and declining air quality are likely to pose increasing problems for human health, especially in urban areas.](#)
- [Agricultural production, including dairy, fruit, and maple syrup, are likely to be adversely affected as favorable climates shift.](#)
- [Severe flooding due to sea-level rise and heavy downpours is likely to occur more frequently.](#)
- [The projected reduction in snow cover will adversely affect winter recreation and the industries that rely upon it.](#)
- [The center of lobster fisheries is projected to continue its northward shift and the cod fishery on Georges Bank is likely to be diminished.](#)

Northeast annual average temperature has increased by 2°F since 1970, with winter temperatures rising twice this much. Warming has resulted in many other climate-related changes including more frequent very hot days, a longer growing season, an increase in heavy downpours, less winter precipitation falling as snow and more as rain, reduced snowpack, earlier break-up of winter ice on lakes and rivers, earlier spring snowmelt resulting in earlier peak river flows, rising sea surface temperatures, and rising sea level. These trends are projected to continue, with more dramatic changes under higher emissions scenarios compared to lower emissions scenarios. Some of the extensive climate-related changes projected for the region could significantly alter the region's economy, landscape, character, and quality of life.

### **A note on the emissions scenarios**

None of the emissions scenarios used in this report assume any policies specifically designed to address climate change. All, including the lower emissions scenario, assume increases in heat-trapping gas emissions for at least the next few decades, though at different rates.

## Key Issues

Projected Days per Year over 90° F in Boston

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Extreme heat and declining air quality are likely to pose increasing problems for human health, especially in urban areas.

By late this century under higher emissions scenarios, hot summer conditions would arrive three weeks earlier and last three weeks longer into fall. Cities that currently experience just a few days above 100°F each summer would average 20 such days per summer. Cities like Hartford and Philadelphia would average nearly 30 days over 100°F per summer. In addition, cities that now experience air quality problems would see those problems worsen with rising temperatures, if no additional controls were placed on ozone-causing pollutants.

Agricultural production, including dairy, fruit, and maple syrup, are likely to be adversely affected as favorable climates shift.

Large portions of the Northeast are likely to become unsuitable for growing popular varieties of apples, blueberries, and cranberries under higher emissions scenarios. The climate conditions suitable for maple/beech/birch forests are projected to shift dramatically northward, eventually leaving only a small portion of the Northeast with a maple sugar business and the colorful fall foliage that is part of the region's iconic character.

Severe flooding due to sea-level rise and heavy downpours is likely to occur more frequently.

The densely populated coasts of the Northeast face substantial increases in the extent and frequency of storm surge, coastal flooding, erosion, property damage, and loss of wetlands. New York state alone has more than \$2.3 trillion in insured coastal property. Much of this

coastline is exceptionally vulnerable to sea-level rise and related impacts.

Ski Areas at Risk under Higher Emissions Scenario†

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The projected reduction in snow cover will adversely affect winter recreation and the industries that rely upon it.

The length of the winter snow season would be cut in half across northern New York, Vermont, New Hampshire, and Maine, and reduced to just a week or two in southern parts of the region by late this century under a higher emissions scenario. Winter snow and ice sports, which contribute \$7.6 billion annually to the region's economy, will be particularly affected by warming.

The center of lobster fisheries is projected to continue its northward shift and the cod fishery on Georges Bank is likely to be diminished.

Lobster catches in the southern part of the region have declined dramatically in the past decade, associated with a temperature-sensitive bacterial shell disease. Analyses also suggest that lobster survival and settlement in northern regions of the Gulf of Maine could increase under warmer conditions. Cod populations, also subject to overfishing and other stresses, are likely to be adversely affected as temperatures continue to rise.